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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,399	09/25/2003	Deliang Ding	7014-10	8076

7590 02/14/2006

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SUITE 302
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EXAMINER	
SANDERS, KRIELLION ANTIONETTE	
ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,399	DING ET AL.	
	Examiner	Art Unit	
	Kriellion A. Sanders	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 6-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 6-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

2. The disclosure is objected to because of the following informalities: Applicant has provided incorrect information for SN 09/637,263 at page 1 of the specification. The filing date and inventor information is incorrect.

3. There are numerous typographical errors throughout the specification. These include, for example, page 1, line 18, "relies" should be --rely--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10, line 6, "said" should be deleted.

The basis of measurement for the percentage of the inert polar solvent is not defined. All other components in claim 10 have been defined based upon the weight of the composition.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-19 are rejected under 35 U.S.C. 102(a) as being anticipated by Ward et al 6602834.

8. Ward et al 6602834 discloses lubricating compositions for use with a wire cutting apparatus, such as a multi-wire saw for cutting hard material, which can have up to about 70% abrasive material suspended within it. The composition contains abrasive particles suspended in a mixture of high and low molecular weight polyalkylene glycols and a suspension agent.

Specifically, the compositions comprise:

A lubricating/suspension "carrier" composition comprising:

a) from about 0.0 to 5.0 weight percent of a surfactant;

b) about 0.05 to 10 weight percent of a polymeric polyelectrolyte having the same polarity chain pendant charge (i.e.; positive or negative) as said surfactant, and

c) from about 80 to 99.5 weight percent of polyalkylene glycols, wherein the alkylene group contains 2-5 carbon atoms. Preferably, said glycols are selected from the group consisting of polyethylene glycol, polypropylene glycol, polyisobutylene glycol and their coglycols; and wherein said glycols consist of (on a total formulation weight percent basis) from about 80 to 99.5 weight percent of a glycol having a molecular weight of about 200-600, most preferably of about 200-400, whereby the viscosity ranges from about 50 to 300 cps, optionally

d) from about 0.0-20.0 weight percent of a dispersing or suspension solvent other than the polyalkylene glycols such as those described in U.S. Pat. No. 6,054,422 and including, but not limited to, di- or tri-glycol monomethyl ether, NMP, DMAC and the like, and

e) less than 10% by weight of water.

Normally about 40 to 50% by weight of abrasive particle material is dispersed and suspended in the carrier/lubricating composition.

The abrasive material suitable for use in the composition may include diamond, silica, tungsten carbide, silicon carbide, boron carbide, silicon nitride, aluminum oxide or other hard grit "powder" material. One of the most preferred abrasive materials is silicon carbide. The mean or average particle size of the abrasives range from about 5-50 microns. The abrasive material is used in an amount ranging from 20 to 70 weight percent of the suspension. See col. 5, lines 50-61.

Additional polar solvents, mentioned in (d) above, which are useful as suspension or dispersing agents include alcohols, amides, esters, ethers, ketones, glycol ethers or sulfoxides. Specifically, examples of polar solvents are dimethyl sulfoxide, dimethyl acetamide (DMAC), N-methyl pyrrolidone (NMP), (gamma) butyrolactone, di(ethylene glycol) ethyl ether, di(propylene glycol) methyl ether, tri(propylene glycol) monomethyl ether and the like.

When the metal hydroxides are utilized the carrier viscosities are generally greater than 100 cps and the slurry viscosities are generally greater than about 300-350 cps. The metal hydroxides are advantageously used to neutralize the anionic polyelectrolytes when the carrier is PEG 400 and anionic fluorinated or non-ionic surfactant is utilized. The resulting compositions have excellent viscosity maintenance with elevated temperatures. Ward et al finds it advantageous to adjust the pH of the suspension to a range of 4.5 to 8. See claim 11.

The patented invention differs from applicants primarily in that it utilizes a principle of creating an overall repulsive charged medium inside the polar solvent carrier system by including polyelectrolytes therein. See col. 3, line 60 through col. 4, line 9. It is noted however, that while applicant's claims do not specify such a system the claims do not preclude such a system either. The polyeletrolytes of Ward et al correspond to the suspending particles of the present invention. Ward indicates that anionic surfactants such as derivatives of sulfonic acids may be used as the polyelectrolyes. (See col. 4, lines 24-63.) These polyectrolytes may be neutralized with metal hydroxides, which, in situ, necessarily lead to the hydroxide form. Metal hydroxides may be used with the expectation of increases viscosity for the slurry. See col. 8, lines 33-40. This is essentially the same procedure for forming suspending particles that applicant describes at pages 7 and 8 of the specification.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al 6602834 for the reasons set forth above.

It would have been obvious to select any of the disclosed components of the Ward et al invention and combine them to form a slurry in the manner set forth by patentee absent some clear showing of unexpected results attributable to a variation not disclosed by Ward et al.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-19 are rejected on the ground of nonstatutory double patenting over claims 1-17 of U. S. Patent No. 6602834 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is **fully disclosed** in the patent and is covered by the patent since the patent and the application are claiming common subject matter, to an aqueous suspension as described above.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

13. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al, US Patent No. 6602834 as applied to claims 1-19 above, and further in view of Canaperi et al, US Patent No. 6348076.

Canaperi et al discloses slurry compositions that are essentially the same as those of Ward et al. The patented invention relates to a slurry composition comprising about 10 to about 50 grams/liter of an oxidizing agent; about 1 to about 5% by weight of abrasive particles; about 0.5 to about 30 ml/l of a surface active agent; and about 0.1 to about 5 grams/liter of a polyelectrolyte. In addition, when the compositions are used for polishing copper, about 0.5 to about 5 grams/liter of a copper corrosion inhibitor are also included in the composition The slurry compositions of Ward comprise two parts wherein Part A comprises an oxidizing agent, and abrasive particles; Part B comprises a surface active agent and polyelectrolyte; and, when employed, the copper corrosion inhibitor can be included in Part A and/or Part B.

The slurry of the invention is preferably an aqueous slurry. Other types of suitable slurries include those using the diluent organic **solvents** such as propylene carbonate and mono and polyhydric alcohols such as methanol, ethanol, ethylene glycol and glycerol. Mixtures of these diluents as well as mixtures with water can be used when desired.

Suitable oxidizing agents include oxidizing metal salts, oxidizing metal complexes, oxidizing acids such as nitric, persulfuric, peracetic and periodic acids, **iron salts such as nitrates and sulfates.** The oxidizing agent(s) are typically present in the composition in amounts of about 10 to about 50 grams/liter, and preferably about 20 grams/liter.

The compositions may also include a **corrosion inhibitor**.

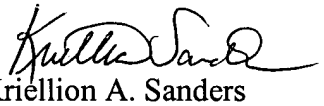
The compositions of the invention also include **abrasive particles**. Examples of suitable abrasive particles include alumina, silica, ferric oxide, zirconia, ceria, and titanium dioxide and mixtures thereof. The abrasive particles may additionally include a dual-valence rare earth ion or suspension of its colloidal hydroxide, wherein the rare earth ion is in its higher valent form. Examples of some suitable rare earths are Ce^{4+}, Pr^{4+} and Tb^{4+} or suspensions of their colloidal oxides, such as cerium oxide. The dual-valence rare earth or rare earth oxide colloid acts as an oxidation catalyst. The abrasive particles typically have a particle size of about 10 to about 1000 nanometers and preferably about 50 to about 200 nanometers. The amount of abrasive particles is typically about 1% to about 5% by weight, and preferably about 2% by weight. See col. 3, line 39 through col. 5, line 28.

In view of the similar components and uses for the slurries of Ward et al and Canaperi et al, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the corrosion inhibitors of Caneperi et al into the slurries of Ward in the manner described to derive their usual corrosion-inhibiting properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kriellion A. Sanders
Primary Examiner
Art Unit 1714

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